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Course Code : 09PP13

Roll No:

(To be filled in by the candidate)

PSG COLLEGE OF TECHNOLOGY, COIMBATORE - 641 004

SEMESTER EXAMINATIONS, APRIL / MAY 2011

ME (PT) - PRODUCTION ENGINEERING Semester : 4

09PP13 RAPID PROTOTYPING

Time : 3 Hours

Maximum Marks : 100

INSTRUCTIONS:

1. Answer **ALL** questions from PART - A and Answer any **FOUR** questions from PART - B. Question under PART - C is Compulsory.

PART - A**Marks : 10 x 3 = 30**

1. "Rapid prototyping is an integral part of Time Compression Engineering" – Justify.
2. With the help of a flow chart show the various phases in product development.
3. What is meant by bead width and air gap in fused deposition modeling process?
4. Mention the principle of operation of LENS process.
5. What are the merits and demerits of prototype development by means of SLA process?
6. Differentiate soft tooling and hard tooling with examples.
7. List any three internet based software packages used for RP process with its applications.
8. Mention any six feature constraints that are to be considered for identifying candidate orientations for the SLA process.
9. List the process sequence of investment casting.
10. What is meant by reverse engineering?

PART - B**Marks : 4 x 12.5 = 50**

11. With a neat sketch explain the LOM process in detail with its merits, demerits and applications.
12. Describe the SLS process with the materials used to make a prototype of a car wheel rim.
13. a) Explain in detail the 'JP system 5' process to build conceptual models. (6)
b) Discuss in detail the various stages of data preparation in SLA process. (6.5)
14. a) Explain in detail the role of magics and mimics softwares in RP. (5)
b) List the data preparation errors in RP. Discuss each one of them in detail with suitable sketches. (7.5)
15. a) Discuss the FDM Process with neat sketches. (6)
b) How the CAD model is converted into a model of RP? Also explain in detail about the conversion of a CAD model into STL file. (6.5)

PART - C**Marks : 1 x 20 = 20**

16. With a neat sketch explain in detail the silicon rubber rapid tooling and vacuum casting process.

FD/KP

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